

**EPA Superfund
Record of Decision:**

**SAND CREEK INDUSTRIAL
EPA ID: COD980717953
OU 02
COMMERCE CITY, CO
06/30/1993**

Text:

RECORD OF DECISION

DECLARATION STATEMENT

SITE NAME AND LOCATION:

Sand Creek Industrial Site
L. C. Corporation Property
Operable Unit 2
Commerce City, Colorado

DECLARATIONS OF BASIS AND PURPOSE

This decision document presents the selected remedial action for Operable Unit 2, the L. C. Corporation Property, at the Sand Creek Industrial Site in Commerce City, Colorado. This remedial action has been developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), applicable state law and, to the extent practicable, with the National Oil and Hazardous Substances Pollution Contingency Plan (the National Contingency Plan, Title 40 Code of Federal Regulations Part 300). This decision is also based on the administrative record for the site. The state of Colorado concurs with the selected remedy.

ASSESSMENT OF THE SITE AND DESCRIPTION OF SELECTED REMEDY

As a result of prior cleanup activity on the OU2 property there is no significant risk to the public health by ingestion, inhalation, or skin absorption. The former neutralization of the acid pits does not need augmentation or additional activity. No further action is therefore recommended for OU2.

STATUTORY DETERMINATIONS

I have determined that the no action alternative at the Sand Creek Industrial Site Operable Unit 2 is a remedy that provides protection of public health, welfare, and the environment and is cost effective. The State of Colorado has been consulted and agrees with the approved remedy. Because this remedy will not result in hazardous substances remaining on site, above health-based levels, no five year review will be necessary for OU2.

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SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

Sand Creek Industrial Site
L. C. Corporation Property
Operable Unit 2
Commerce City, Colorado

I. SITE NAME, LOCATION, AND DESCRIPTION

The Sand Creek Industrial Site occupies about 550 acres in Commerce City, Adams County, Colorado. Operations at the site, an active industrial area throughout its history, have included trucking firms, petroleum refining operations, chemical production and supply companies, warehouses, and small businesses. Environmental contamination at the site resulted in its inclusion on the National Priorities List (NPL) in December 1982. Four suspected contaminant source areas have been identified at the Sand Creek Industrial Site: Oriental Refinery, the Colorado Organic Chemical facility, the 48th and Holly Landfill, and the L. C. Corporation property. These properties, their ownership, and the operations on them are distinct; however, they were added to the NPL as a single site and each source area was designated as an operable unit. A site-wide remedial investigation (RI) was completed in 1988. This record of decision is concerned with the L. C. Corporation property soils, operable unit (OU) 2 (see Figure 1).

The L. C. Corporation property has been part of Commerce City industry since 1948. Between 1948 and 1958, impoundments were constructed on the property and later enlarged. A gravel pit and drainage ditch that discharged to Sand Creek were excavated. Large areas were cleared and buildings were constructed. L. C. Corporation itself was formed in 1955.

The L. C. Corporation site lies within the Sand Creek flood plain, which is in turn part of the South Platte River system. Topography in the area rises gently to the south. The site surface is composed principally of alluvial materials and imported fill. Imported fill material covers the area sufficiently that natural features are difficult to discern. Surficial fill materials at the site generally consist of clay, silt, sand, gravel, and debris including concrete, brick, wood, metal, plastic, glass, and trash. Approximately 10 feet of imported fill is present on the L. C. Corporation property at OU2. Fill material is generally poorly compacted and highly permeable.

The site is located in Commerce City, Adams County, Colorado. U. S. Interstate 270 (I-270) is directly north of OU2. Properties to the north of OU2 are zoned for light and heavy industrial,

industrial park, industrial park storage and agricultural uses. About 15 residences with about 25 people are located within a mile of the site. South of OU2 are OU1 and OU5, where pesticides were manufactured during the 1960's and 1970's, and the Oriental Refinery operated prior to being destroyed by fire in 1955.

Commerce City's Comprehensive Plan 1985 to 2010 indicates that future land use of this area will be primarily industrial, with a recreation/open space designation for the Sand Creek floodplain.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

Shell Chemical Company contracted with L. C. Corporation in 1968 for the disposal of spent sulfuric acid from Shell's chemical plant at the Rocky Mountain Arsenal, which is adjacent to Commerce City. L. C. Corporation was to line its disposal pits with an ethylene propylene copolymer film before disposing of any acid. Some type of liner was installed, however, its composition could not be determined because of the disintegrated condition of the liner. The liner was breached and repaired after acid was poured in the pits. Approximately 7,810 tons of sulfuric acid were disposed of in the L. C. Corporation pits.

In November 1974, the Tri-County Health Department investigated a complaint involving severe chemical burns to livestock that had strayed onto L. C. Corporation property. The department found pools of liquid in lined pits on the property. L. C. Corporation agreed to clean up the liquid after analysis showed it was a 30 percent sulfuric acid solution with a pH of 0.75, which is strongly acidic. In July 1975, employees of the Tri-County Health Department discovered a seep discharging extremely acidic liquid to Sand Creek. Subsequent analysis in 1976 of a sample of the seep liquid and of water from Sand Creek indicated that both contained sulfone, an intermediate byproduct from Shell's manufacture of the herbicide Planavin. Sulfone can be any number of compounds containing the sulfur atom and is used as an indicator for an acid source. Thus far, no significance has been ascribed to the sulfones except for their use as an indicator that sulfur compounds are present, some of which may be toxic. See the section in this ROD, entitled "Site Characteristics," for more information on the contamination at the site.

The Colorado Department of Health (CDH) issued an emergency cease and desist and cleanup order against L. C. Corporation, its principals, and other parties on October 25, 1976. After several years of investigations, discussions, negotiations, and legal action, L. C. Corporation undertook cleanup of the site in 1980. L. C. Corporation excavated a 1-acre area to a depth of 15 to 20 feet, mixed the soil with lime, and replaced the neutralized soil in the excavation. Samples collected for the U.S. Environmental Protection Agency (EPA) since 1980 have contained sulfones but the soils have not been acidic.

An EPA field investigation team (FIT) evaluated the Sand Creek Industrial Site for potential inclusion on the NPL in 1982. Again, soil and water samples on OU2 contained sulfones but were not acidic. The entire site, including OU2, was added to the NPL on December 30, 1982 because of the history of past activities which resulted in contamination. In addition, a remedial investigation was performed on the OU2 property in 1992.

III. COMMUNITY RELATIONS

In general, community interest in OU2 and the Sand Creek Superfund Site has been low. EPA has undertaken several community relations activities as part of the recent site history. In the fall of 1991 community interviews were conducted to update the site community relations plan. The plan was updated and released in December of 1991. The plan outlines the community concerns and the strategies for implementing the plan.

The project manager and community relations coordinator have met with the Tri-County Health staff, South Adams County Water and Sanitation District, Rocky Mountain Arsenal personnel, Commerce City/Adams County officials, Metro Waste Water officials and Representative Pat Schroeder's staff to update them on site activities.

The Proposed Plan for OU2 was issued to the public on September 9, 1992. The Proposed Plan and RI reports were made available to the public through the Administrative Record maintained at the EPA Region VIII Superfund Records Center in Denver and at the information repository at the Adams County Library. A notice of availability of these documents and notification of the public meeting were published in The Denver Post on September 11, 1992 and in Commerce City Beacon on September 9, 1992.

The public comment period was open from September 11, 1992 to October 11, 1992. The public meeting was held on September 23, 1992 at the Commerce City Recreation Center and had two attendees. EPA and the CDH explained the basis for the no further action alternative and responded to questions. A transcript of the public meeting has been entered into the Administrative Record. A Responsiveness Summary, prepared by EPA to address public comments is included in the Administrative Record. IV. SITE CHARACTERISTICS

The Sand Creek Industrial Site is located in an urban environment that has been extensively modified from its original condition over the past 50 years. The site lies in an area of low relief within the Sand Creek flood plain, which is part of the South Platte River system. Sand Creek is a braided, bedload stream generally wider than deep; maximum channel widths range from 22 to 28 feet within the area of the site. Sand bars are evident at numerous locations along the stream and stream banks are vegetated. Active erosion is noticeable on the southern side of the creek downstream from the Holly Street Dam, one of a number of artificial structures impeding stream flow. Others include two bridges and a sheet pile dam near the downstream end of the study area (the Vasquez Dam). The L. C. Corporation property lies within the lower portion of the Sand Creek watershed. The on-site drainage area represents less than one-half of one percent of the total drainage to Sand Creek. As a result, the change in flow as Sand Creek passes the site is minimal. Runoff from much of the area is carried in swales to low-lying areas, where it evaporates or infiltrates into the underlying ground water. There are no permanent surface water bodies at OU2.

A site-wide RI completed in 1988 identified several contaminants on the L. C. Corporation property but sources and extent of contamination were not defined, because of the limited number of samples taken. Furthermore, duplicate samples frequently did not verify the presence of contaminants. Therefore, additional soil samples were collected in October and November 1990 and in November 1991 to verify or better define contamination identified in the site-wide RI.

To determine the health risks on the L. C. Corporation property a baseline risk assessment was completed. The risk assessment assumed there would be unrestricted use of the property. For example, there could be urban development on and around the site for both commercial and industrial use.

The 131 soil samples collected during the various investigations at OU2, contained contaminants including metals, insecticides, herbicides, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). Maximum concentrations were evaluated for all contaminants of concern (COCs). The maximum concentration was calculated for a residential area, which is the most conservative scenario. Based upon the evaluation of the OU2 data there is no need for further clean up of the property. Following is a detailed summary of the COCs and their distribution.

Metals. Six metals (arsenic, chromium, lead, mercury, nickel, and zinc) were identified as potential contaminants of concern based on observed concentrations and relative toxicity. Concentrations were generally higher

in shallow soil samples than in deep samples. None of the measured concentrations of chromium exceeded that action level of 50 milligrams per kilogram (mg/kg); the mean concentration of all other metals except mercury was below background concentrations established during the site-wide RI. Concentrations of mercury exceeded background levels in three shallow soil samples. However, the maximum mercury concentration - about twice the background level - appears anomalous because the concentrations in all other samples were below the background level. The maximum mercury concentration is below the accepted risk level. In addition, many of the high concentration values could be considered anomalous due to lack of consistency with the majority of the samples obtained. Overall, contamination of OU2 soils by these metals was judged of lesser concern than other contamination at OU2 because of the very small number of samples with elevated metal measurements.

Insecticides. A few soil samples contained insecticide concentrations that exceeded background levels. These samples did not indicate a distinct source of contamination. These insecticide concentrations most likely have resulted from their application for insect control during historical site operations.

Herbicides. Relatively high herbicide concentrations were found in a few soil samples collected near a heavily traveled street, where application of herbicides for weed control would be expected. As with insecticides, the distribution of herbicides throughout the site did not indicate a distinct source of contamination.

Volatile Organic Compounds. A few VOCs were detected in the soil samples taken on the OU2 property. Acetone and methylene chloride compounds are common laboratory-induced contaminants and were detected in method blanks. Acetone and methylene chloride are used in the laboratory extraction process and may have contaminated the method blanks and the samples. The other VOCs detected in soil samples were at concentrations below baseline risk for the site.

Semivolatile Organic Compounds. Numerous polyaromatic hydrocarbons (PAHs), detected in soils at OU2. The high concentrations of PAHs found during the site-wide investigation (1982 Remedial Investigation) could not be verified by subsequent sampling.

Based upon an evaluation of the OU2 data, and the remediation that has been performed, there is no need for any additional cleanup of the site.

A. SURFACE GEOLOGY

Topography in the area rises gently to the south, with elevations ranging from 5,160 feet above mean sea level (MSL) in the northwestern corner of the site to 5,250 feet MSL in the southeastern corner. Interpretation of natural features is complicated by the extensive amount of fill that has been brought into the area. Natural drainage paths also have been altered by development in much of the area. Surficial deposits consist of Pleistocene and Holocene alluvium, eolian sediments, and loess. Alluvial deposits range in thickness from less than 30 feet to approximately 90 feet near the Oriental Refinery property. The deposits generally consist of interbedded gravel, sand, silt, and clay, the minor amounts of cobbles and pebbles. Because these deposits are generally unconsolidated, permeability in the sand and gravel layers is high. In addition, paleochannels eroded in the bedrock may influence the occurrence and movement of ground water.

B. SUBSURFACE GEOLOGY

The subsurface geology consists of Quaternary alluvial deposits, artificial fill, and Tertiary bedrock. Alluvial deposits consist of sand, silt, and clay of the Piney Creek alluvium, eolian deposits of silt and clay, and sand and gravel of the Broadway alluvium. Clay and gravel sediments of the Slocum alluvium also underlie parts of the site.

Bedrock beneath the site is made up of claystone, shale, siltstone, and sandstone of the Denver formation. In the northwestern and southeastern limits of the study area, the bedrock lies within 30 feet of the groundwater surface. The Denver formation is underlain by the Arapahoe formation, Laramie formation, and Fox Hills sandstone. Outcrops of bedrock are not visible at the LCC property.

V. HEALTH RISK ASSESSMENT

To determine the health risks on the L. C. Corporation property a baseline risk assessment was completed. The risk assessment assumed there would be unrestricted industrial use of the property. For example, there could be urban development on and around the site for both commercial and industrial use.

The risk assessment for OU2 produced the following results:

- . Due to low concentration of contaminants, there is no significant risk to the public health by ingestion, inhalation, or skin absorption. Polycyclic aromatic hydrocarbon [PAH] concentrations at OU2 are typical of those in urban environments.
- . Current off-site migration of contaminated surface soils and surface water pose no significant human health risk to adjacent commercial and industrial areas.

VI. RECOMMENDED ALTERNATIVE

EPA and CDH have selected a No Action alternative for OU2, because the operating unit has already been cleaned up. No further remediation is needed. The OU 2 RI and risk evaluation found that there is no current or potential threat to human health and the environment. No other alternatives were evaluated, for OU2 is already in a protective state.

VII. DOCUMENTATION OF SIGNIFICANT CHANGES

No changes in the proposed remedy have been made since the release of the OU2 RI and the OU2 Proposed Plan.